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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,202	10/24/2003	Sia Kim Tan	CS02-099	2334

30402 7590 01/16/2007  
WILLIAM STOFFEL  
PMB 455  
1735 MARKET ST. - STE. A  
PHILADELPHIA, PA 19103-7502

EXAMINER
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CHACKO DAVIS, DABORAH

ART UNIT	PAPER NUMBER
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1756

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/693,202

Applicant(s)

TAN ET AL.

Examiner

Daborah Chacko-Davis

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1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8,10,12,14,15,17-19 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-6,8,10 is/are allowed.
- 6) ☒ Claim(s) 12,14,15,17-19 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. A complete listing of the all of the claims is not present. It appears that claim 9 has been inadvertently omitted in the "Listing of the claims" filed on 10/17/2006. When filing a response, claim 9 should be added back in the "Listing of claims", along with an appropriate status identifier either "Previously presented" or "Canceled" or "Original". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 14, is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14, is an improper Markush group, and at lines 5-8, recites "said second transmission level film is comprised of a material selected form the group consisting of indium tin oxide, elemental metal. molybdenum silicon oxynitride; gold, chromium fluoride, zirconium silicon oxide, molybdenum silicon oxide, aluminum nitride, or silicon nitride" and renders the claim indefinite, and should be amended to recite "said second transmission level film is comprised of a material selected from the group consisting of indium tin oxide, elemental metal, molybdenum silicon oxynitride, gold, chromium fluoride, zirconium silicon oxide, molybdenum silicon oxide, aluminum nitride, and silicon nitride.

### ***Claim Rejections - 35 USC § 102***

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 12, 14, 15, 17-19, are rejected under 35 U.S.C. 102(e) as being anticipated by U. S. Patent No. 7,014,962 (Lin et al., hereinafter referred to as Lin).

Lin, in the abstract, in col 4, lines 35-67, in col 7, lines 28-50, in col 6, lines 4-7, in col 11, lines 50-67, and in figure 4L, discloses a reticle that transmits three intensities of light, the reticle includes i) a first transmission level film i.e., the substrate that essentially transmits 100% of the light i.e., the first intensity of light transmitted through the reticle to the photoresist covered substrate at a first dosage, ii) a second transmission level film that has a second intensity of light transmission of about 30% (between 20% and 70%) and the transmitted second intensity light is retarded in its phase by about 180 degrees, and is transmitted to the photoresist covered substrate at a second dosage iii) a third transmission level film that has a third transmission intensity of about 0% (essentially block all light transmitted there through) and transmitted to the photoresist covered portion of the substrate at a third dosage, wherein the second transmission film (reference 101A) overlies the first transmission film and has openings (reference 32) that reveals the first transmission film, the third transmission film (reference 102A) overlies the second transmission film and has an opening that reveals

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a predetermined area of the second transmission film (reference 26) and also reveals a predetermined area of the first transmission film (references 20, and 24) resulting in a patterned photoresist that inherently is exposed to three different dosages forming a multi-level profile in the photoresist (exposure of three different dosages of transmitted light on the photoresist will result in a developed photoresist that has three different thicknesses, a dual damascene profile), and the pattern formed is an opening in the photoresist (the 100% transmitted area) (claims 12, 17-19). Lin, in col 10, lines 20-39, discloses that the first transmission film is quartz, the second transmission film is molybdenum silicon oxide, or silicon nitride, and the third transmission film is chrome (claims 14-15).

#### ***Allowable Subject Matter***

6. Claims 1, 3-6, 8, 10, and 21, are allowable over the prior art of record over U. S. Patent No. 5,936,707 (Nguyen et al., hereinafter referred to as Nguyen) in view of U. S. Patent No. 6,482,554 (Matsunuma). See Remarks, filed 10/17/2006, on pages 14, and 15.

#### ***Response to Arguments***

7. Applicant's arguments, see Remarks, filed 10/17/2006, with respect to claims 1, 3-6, 8, 10, 12, 14-15, 17-19, and 21 have been fully considered and are persuasive. The 102 and 103 rejections made in the previous office action (paper no. 0506) have been withdrawn. Applicant's arguments with respect to claims 12, 14-15, 17-19, and 21,

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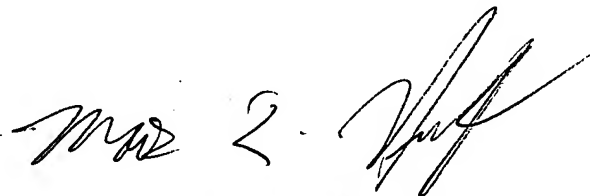
have been considered but are moot in view of the new ground(s) of rejection (see paragraph no. 5).

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daborah Chacko-Davis whose telephone number is (571) 272-1380. The examiner can normally be reached on M-F 9:30 - 6:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F Huff can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dcd

January 2, 2007.

A handwritten signature in black ink, appearing to read 'Mark F. Huff', is written over a large, stylized number '2'.

MARK F. HUFF  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700